DRY GAS COUPLINGS

The Dry Gas Coupling has been developed for a safe and quick connection and disconnection of hoses and loading arms to tank trucks, rail tankers and tank containers. During connection and after disconnection there is no spillage.

MannTek Dry Gas Coupling for safe handling of LPG - in liquid or vapor phases

This increases safety in the loading process of hazardous fluids.
Suitable for handling a range of LPG applications - Propane and Butane but also for other applications with similar requirements the Dry Gas Coupling is useful.
The robust design, easy servicing and high level of security assures safe and frequent use on a long term basis. This protects the environment and the media handled, reduces the risk of accidents and saves money.

A modular design with several optional features makes it possible to find individual solutions for your special application.

Handling of Gas (LPG) with Dr Gas Couplings

APPLICATION	COUPLING SIZE
Heavy vehicle filling	1”
Loading/unloading of bobtails	2”
Loading/unloading of tank trucks	2”-3”
Loading/unloading of rail cars	3”
Loading/unloading ship to shore	3”-4”

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Why use the Dry Gas Coupling?

Dry Gas Couplings are used to prevent excess spillage. They protect people and property from dangerous and costly exposure by keeping hazardous liquids and vapors in-line and out of the environment.

Dry Gas Couplings are used at liquid or vapor transfer points where you do not want product loss. Using Dry Gas couplings will reduce the hazards typically found when handling/processing LPG.

- Spill Free handling for loading and unloading tank trucks, rail tankers and tank containers.
- Minimization spillage and product loss keeps the environment free from Hazardous Vapors and Liquids.
- "Easy to Use" – design saves time and minimises health risks.
- Reliability and easy servicing saves your investment.
- Approved for safe handling of LPG - Propane (CAS 74-98-6, UN 1978) and Butane (CAS 106-97-8, UN1011). UN-classification 2.1 and similar applications.
- 3" and 4" is compatible with existing Dry Disconnect / Dry Break Couplings according to STANAG 3756.
- The 1" is a heavy duty vehicle filling nozzle according to EN 13760.
- Approvals according to the European Directives PED and ATEX and the international requirements ADR, RID, IMDG and TDT.

Calculation of Savings

The liquid release and the cost loss for 1.000.000 connections and disconnections in LPG logistics per year when 1 T LPG = 1000 $ could be :

COUPLING TYPE	TON LPG/YEAR LOSS	COST FOR LOSS LPG
Dry Gas Couplings	0,175 T	175$
Traditional System (Acme threaded or flange to flange)	Min 250 T Max 5000 T	250.000$ 5,000.000$

Technical data, Dry Gas Couplings

SIZE	1", 2", 3" and 4"
MATERIAL	Gunmetal / Brass and Stainless Steel 316L SS-EN 10 272-1.4404+AT Seal: FPM (Viton) or NBR (Nitrile) according to EN549 B2/H3 other materials on reques
TEMPERATURE RANGE	-20°C (-4°F) to 80°C (176°F) (larger temperature range from -50°C (-58°F) up to +200°C (392 °F) is possible, depending on Seal material)
MAXIMUM WORKING PRESSURE	MWP PN 25. MAWP 300 psi
TEST PRESSURE	38 bar 450 psi
MIN. BURST PRESSURE	125 bar / 1813 psi
SAFETY FACTOR	5:1
END CONNECTIONS	Female and Male BSP / NPT, ACME, Witworth threads and flanged DIN and ANSI.

Other connections on request.

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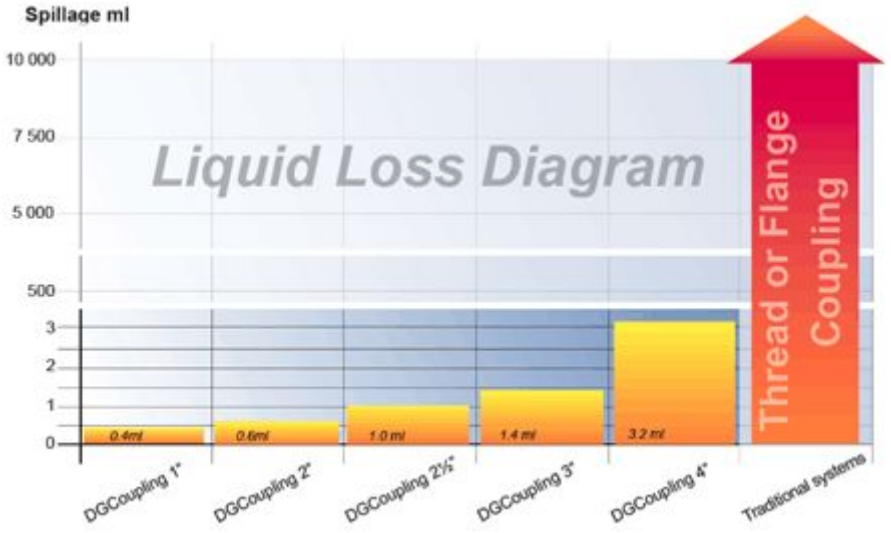
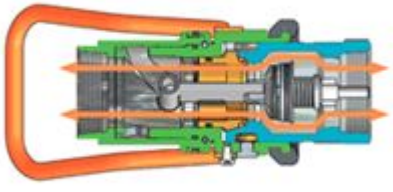
Spillage diagram

Comparison of liquid loss during disconnection for Dry Gas Couplings and traditional systems using open threaded couplings, or flange to flange connections. The diagram shows that liquid loss for traditional systems may be as much as 10.000 times more than when using Dry Gas Couplings.



Pressure loss curve

Dry Gas Coupling Function



To Connect
Push and turn
- It's coupled
- Full flow

To disconnect
Turn and pull
- It's realised
- No spillage

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Dry Gas Coupling Applications

1" Dry Gas Couplings	Used as light & heavy duty vehicle filling nozzle (EN 13760) Vapor recovery line
2" Dry Gas Couplings	Loading / unloading for bobtail tank trucks and intermediate bulk trucks Vapour recovery line Connecting pipelines.
3" Dry Gas Couplings	3” and 2” Dry Gas Couplings for top loading of LPG rail tanker. 3” couplings for liquid phase and 2” for vapour phase 3” and 2” Dry Gas Couplings for spray loading of both LPG rail tanker and Gas trucks. No vapour return. 3” and 2” Dry Gas Couplings for bottom loading of both LPG rail tanker and Gas trucks. 3” couplings for liquid phase and 2” couplings for gas phase.
4" Dry Gas Couplings	Loading / unloading of ship tankers and rail tankers

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